

AMENDMENTS TO THE DRAWINGS

Replacement drawing sheet number 4 of 13, comprising Figure 3, is appended to the end of this document. Figure 3 has been amended to remove highlighting, to conform with changes made to the specification.

REMARKS

Claims 59-121 were prior pending in the application. Claims 63, 64, 75, 76, 83-87, 92-95, 97-99, 102-105, 108, 109, 114-117, 120, and 121 were indicated allowable.

Claims 59-62, 65-74, 77-82, 88-90, 100, 101, 106-107, 112-113, and 118-119 are rejected, and has objected to claims 91, 96, and 110-111.

Twelve claims 59-60, 62-66, 68-69, 72-74, 89-91, 101, 104, and 110 are currently amended: Claims 122-133 are newly added. Twelve claims have been cancelled: claims 77-84, 105, 107-109, 111, 113-115, and 120-121.

Entry of the Amended and New claims is respectfully requested.

Examiner Interview

Applicants thank the Examiner for her time and assistance during recent telephonic interviews aimed at finalizing the amendments and responding to the Examiner's objections.

Specification

The Examiner requested updating of the specification to reflect changes in newly submitted drawings. Applicant draws the Examiner's attention to the Amendment filed February 16, 2010, where the following sentence was deleted in the Brief Description of the Figures for Figure 3: "Amino acid residues sharing identity are highlighted."

The specification was carefully reviewed for additional text describing Figures 2, 3, and 5. With this Amendment, the specification has been amended to conform to the Figures.

Drawings

Figure 3 has been amended to remove all highlighting in conformance with the changes to the specification, and a replacement sheet containing amended Figure 3 is appended at the end of this document.

Claim Objections

Correction of informalities in claims 59, 91, 96, 110, and 111 was suggested to remove Examiner's objections to the claims: In claim 59, the Examiner suggests "to" should be inserted before "any". With this Amendment, claim 59 has been amended as suggested by the Examiner. Claim 91 has been amended to remove dependency from two claims. Claims 110 and 111 have been amended to replace the word "cereal" with "legume" and no longer duplicate claims 104 and 105. Dependency of claims 93, and 125 has been amended.

With the amendments discussed above, these claims are considered to be in allowable form.

Claim Rejections - 35 USC § 112, second paragraph

Claims 65-74 and 77-82 were rejected under 35 U.S.C. 112, second paragraph, as indefinite, citing claims 65, 66, 69, and 72 as lacking antecedent basis for the term, "protein". Claims 65, 66, 69, and 72 have been amended to refer to replace "protein" with the term "polypeptide". Claims 65-74 and 77-82 are considered to be in allowable form. Removal of this rejection is respectfully requested.

Claim Rejections - 35 USC § 102

A. Anticipation by Madsen

Claims 59, 61, 65, 67 and 69-71 were rejected under 35 U.S.C. 102(a) as anticipated by *Madsen et al.*, 2003 (*Nature* 425:637-640). The Examiner notes that *Madsen* teaches sequences having 100% identity to SEQ ID NOs: 6-8, 11, 12, 15, 30 and 31; and 87% identity to SEQ ID NO: 32.

Applicant respectfully traverses this rejection. *Madsen* was published on October 9, 2003 **after** the priority date of July 3, 2003. The two priority documents (Danish application and U.S. provisional application) each disclose SEQ ID NOs: 6-8, 11, 12, 15, 30, 31 and 32.

Although the *Medicago truncatula* sequence was not identified as SEQ ID NO: 32 in the Provisional or Danish priority applications, the sequence is disclosed in Figure 3 of the priority documents and the present application. In the current application, the sequence disclosed in Figure 3 is assigned SEQ ID NO:32. Page 9 of the Priority applications explains that Figure 3 shows the aligned amino acid sequence of LjNFR5, PsSYM10, and *Medicago truncatula*. Applicant's priority date of July 3, 2003 is therefore properly claimed for the sequence of SEQ ID NO:32, as well as SEQ ID NOs: 6-8, 11, 12, 15, 30 and 31.

NFR5 polypeptide orthologues for *Glycine Max* (soybean) and *Phaseous vulgaris* (black bean) are first disclosed in the PCT Application filed July 2, 2004, this case being the National stage of the PCT. Example 1.b.6 at pages 32-33 of the U.S. application describes isolation and sequence comparison of these molecules. SEQ ID NOs: 40 and 48 share about 73% and 70% sequence identity with Lotus NFR5 polypeptide SEQ ID NO:8 (See Table 2 at page 56). Although not disclosed in the Priority documents, SEQ ID NOs: 40 and 48 are not anticipated by any of the cited art. Blast analysis of each molecule

At least because SEQ ID NOs: 6-8, 11-12, 15 and 30-32 were disclosed in the priority documents before the publication of *Madsen*, and because SEQ ID NOs: 40 and 48 are not taught or suggested in the prior art, Applicants assert *Madsen* is not prior art to the instant claims. Claims 59, 61, 65, 67 and 69-71 are considered to be in allowable form. Removal of this rejection is respectfully requested.

B. Anticipation by Radutoiu

Claims 60, 62, 66, 68, 72-74, 80-82, 88-90, 100, 101, 106, 107, 118 and 119 are rejected under 35 U.S.C. 102(a) as being anticipated by *Radutoiu et al.*, 2003 (*Nature* 425:585-592). The Examiner notes that *Radutoiu* teaches sequences which have 100% identity to SEQ ID NOs: 21-24 and 99% identity to SEQ ID NO:25.

Radutoiu was published in October 9, 2003 **after** Applicant's provisional application was filed on July 3, 2003. SEQ ID NOs: 21-25 were all disclosed in the priority documents (Danish application and U.S. provisional application), for example, in the Sequence Listing provided. Because sequences 21-25 were disclosed in the provisional application before the publication of *Radutoiu*, Applicant asserts that *Radutoiu* is not prior art to the instant claims.

Claims 60, 62, 66, 68, 72-74, 80-82, 88-90, 100, 101, 106, 107, 118 and 119 are considered to be in allowable form. Removal of this rejection is respectfully requested.

C. Anticipation by Limpens

Claims 60, 66, 72, 80, 88, 100 and 112 are rejected under 35 U.S.C. 102(a) as being anticipated by Limpens *et al.*, 2003 (*Science* 302:630-633 (previously cited)). The Examiner asserts "Limpens teaches a sequence which has 85% [identity] to SEQ ID NO:54." Examiner notes that SEQ ID NO: 54 was first disclosed in the instant application, and accords priority for this sequence as July 2, 2004, the filing of the PCT application (reciting the sequence).

To speed prosecution, Applicants amended the claims to require **at least 90%** amino acid sequence identity to SEQ IDs 52 and 54. Support for this amendment is found at least at page 6 of the specification:

"Substantially identical refers to two nucleic acid or polypeptide sequences that have **at least about 60%**, preferably about **65%**, more preferably about **70%**, more preferably about **70%**, further more preferably about **80%**, most preferably about **90%** or about **95%** nucleotide or nucleic acid identity when aligned for maximum correspondence over a comparison window as measured using one of the sequence comparison algorithms given herein, or by **manual alignment** and visual inspection." Page 6, paragraph [0067]

Conclusion

In conclusion, Applicants priority documents were each filed on July 3, 2003. As such, references dated after July 3, 2003 are not prior art to the sequences disclosed in the prior art documents (SEQ ID NOs: 1-32). Removal of rejections based on the inventors' publications, *Madsen* 2003 and *Radutoiu* 2003 are respectfully requested.

Limpens 2003 is cited for disclosing a sequence that has at least 80% sequence identity to SEQ ID NO: 54. SEQ ID NOs: 52 and 54 are first disclosed in the PCT publication filed July 2, 2004. Applicants have amended the claims to require at least 90% amino acid **sequence identity** to SEQ ID NOs: 52 or 54. *Limpens* does not disclose or suggest a sequence having at least 90% amino acid **sequence identity** to SEQ ID NOs: 52 or 54. Removal of rejections based on the *Limpens* reference is respectfully requested.

Applicants have also added new independent claims drawn to each of the polypeptide sequences recited in claims 59, 60, and 122.

In conclusion, all of the claims remaining in this application should now be seen to be in condition for allowance. A prompt notice to that effect is respectfully solicited. If there are any remaining questions, the Examiner is requested to contact the undersigned at the number listed below.

Respectfully submitted,
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